



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/073,981	02/14/2002	Ryoji Toyofuku	101154-00009	4937

7590 04/15/2003

ARENT FOX KINTNER PLOTKIN & KAHN, PLLC
Suite 600
1050 Connecticut Avenue, N.W.
Washington, DC 20036-5339

EXAMINER

LUM, LEE S

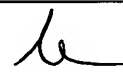
ART UNIT

PAPER NUMBER

3611

DATE MAILED: 04/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/073,981	Applicant(s) TOYOFUKU ET AL. 	
	Examiner Ms. Lee S. Lum	Art Unit 3611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) _____ is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The disclosure is objected to because of the following informalities:

In Claim 4, line 3, "rigs" should be "rings".

In Claim 5, lines 2 and 3, singular elements have been additionally identified with numbers, while others are not. All Claims should be amended to include numbers with all elements, or include none at all.

The following elements lack antecedent basis:

In Claim 1, line 14 – assist torque,

In Claim 3, line 3 – engagement,

In Claim 4, line 5 – circumferential,

In Claim 5, line 6 – axis,

In Claim 6, lines 4 and 5 – peripheral, line 6 – screw.

Appropriate correction is required.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Joshita 5971094.

Joshita discloses an electric power steering apparatus for a vehicle comprising
Rack shaft 3 with rack 4 of gear teeth at one end, and externally-threaded screw 61 at one portion,
Pinion 3a meshing with the rack,

Art Unit: 3611

Ball-screw mechanism 10 with balls 62 and nut 63 engaged with the screw,
Electric motor 8 with hollow shaft 8e extending around the rack shaft,
The hollow shaft engaged with the nut so as to form a connection (Fig 5),
wherein the nut is disposed between the rack and motor, and,
Torque limiter 51 between the hollow shaft and nut, and comprising a split ring of
resilient material (col 5, last paragraph, to col 6, line 4) with a plurality of engagement ribs
(Fig 7a).

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3A. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over Joshita in view of Onodera et al 5904.

Joshita does not disclose the motor as including a commutator and brushes, while Onodera shows commutator 22 and brushes 23. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include these elements, as shown in Onodera, as an alternate means of producing current for different applications.

3B. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Joshita in view of Sugino et al 5927429.

Joshita does not disclose a rack guide, while Sugino shows rack guide 50. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include a rack guide, as shown in Sugino, so that the rack shaft may be properly supported during movement, and to properly engage the pinion with the rack.


Art Unit: 3611

Joshita does not disclose a bush at the other end of the rack shaft, while Sugino shows bush 75 in Fig 6. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this element so that this portion of the rack shaft is properly supported for optimal performance.

4. The prior art made of record, and not relied upon, is pertinent to the Applicant's disclosure, in addition to the art listed on the IDS filed 9/4/02: Shimizu et al 6000491, Watanabe et al 6041885.

5. Communication with the Examiner and USPTO

Any inquiry concerning this communication should be directed to Ms. Lum at (703) 305-0232, M-F, 9-6. Our fax numbers are (703) 872-9326, 872-9327 for after-final comms, and 308-2571 for comms having given prior notice to the examiner. Any inquiry of a general nature, or relating to the status of this application/proceeding, should be directed to Customer Assistance at (703) 306-5771.


Lesley D. Morris
~~Primary Examiner~~
SPE Au3611

Ms. Lee S. Lum
Examiner
3/27/03

